REMARKS

The latest Office Action, mailed August 12, 2004, considered and rejected claims 1-15, 17-20, 22, 24 and 25 in view of LiVecchi and Srikantan.[1]

By this paper, claims 1, 13 and 17 have been amended, claims 24-25 have been cancelled and claims 26-32 have been added.[2] Accordingly, claims 1-15, 17-20, 22 and 26-32 remain pending, of which claims 1, 17 and 26 are the only independent claims that remain at issue.

The present invention is directed primarily to methods and computer program products for reducing the impact of denial of service attacks. In claims 1 and 17, the recited method includes establishing connection sockets for received connection requests, at least one of which is not placed in a backlog queue. For each connection request for which the server computer system cannot currently establish a connection socket, the connection request is placed in the backlog queue without then establishing a connection socket. Thereafter, upon determining that the backlog queue is being used, the method further includes identifying and disconnecting any connection sockets that have no received request data, so as to reduce an impact of a denial of service attack, as described throughout Applicant's specification.

To reduce the risk associated with closing a connection socket that has been established for legitimate reasons, as opposed to one that has been established in response to a malicious denial of service attack, the recited methods can also include waiting a predetermined period of time after determining that the backlog queue is being used. (Claims 15, 22, 27, 28).

---

[1] Claims 1-4, 6, 8-9, 12-13, 16-19, 21 and 23 were rejected under 35 U.S.C. § 102(e) as being anticipated by LiVecchi (U.S. Patent No. 6,427,161). Claims 5, 7, 10-11, 14-15, 20, 22 and 24-25 were rejected under 35 U.S.C. § 103(a) as being unpatentable over LiVecchi in view of Srikantan (U.S. Publication No. 2001-0029548). Although the prior art status of the cited art is not being challenged at this time, Applicants reserve the right to challenge the prior art status of the cited art at any appropriate time, should it arise. Accordingly, any arguments and amendments made herein should not be construed as acquiescing to any prior art status of the cited art.
[2] Support for the new claims and claim amendments is drawn from various passages throughout the specification, including, but not limited to pages 4-6.

In the last amendments (B and C), Applicants have argued that the cited art fails to disclose or suggest any method that includes "identifying any connection sockets that have no received request data" or "disconnecting" these identified connection sockets and that the Examiner has failed to address these claims.[3] However, the Examiner has not responded to these arguments. Instead, the Examiner merely cites passages (Col. 15, ln. 67, col. 16, ll. 1-10 and 18-67) which clearly do not teach or suggest either (a) identifying connection sockets that have no received request data, or (b) disconnecting said connection sockets. These passages, however do not teach anything related to identifying and disconnecting connection sockets that have no received request data, let alone the identification and disconnecting of connection sockets that are determined to be servicing a malicious connection request (claims 26, 30, 32). To the contrary, these passages teach about the transfer of connections from accepted connections queues to a ready queue of the collector socket.

The claim elements of identifying and disconnecting any connection sockets that have no received request data are important according to the present invention because they are part of the method for reducing the impact of a denial of service requests. However, notwithstanding this importance, the cited art not only fails to disclose or suggest these recited claim elements, they fail to even address denial of service attacks. Instead, LiVecchi is directed more generally to thread scheduling techniques for multithreaded servers (Title) and Srikantan is directed more generally to methods for handling events received at a server socket (Title).

---

[3] Instead, the Examiner addressed whether a backlog queue includes connection requests without regard for whether or not the connection requests include associated data. This language, however, has been deleted from the independent claims and put into dependent form. It will be noted, however, that the cited reference in LiVecchi (Col. 13, ll. 15-47) does not teach this claim element. Instead, it merely discloses how long connections will be allowed to remain on queue before a blocked worker thread will be awakened so as to not exceed an acceptable delay. It will be noted that this is a contrary teaching to the claimed identification and cancellation of socket connections. It will also be noted that this cited passage fails to make any reference to requests with associated data or requests without associated data, as the Examiner suggests.

Application No. 09/607,500
Amendment "D" dated November 12, 2004
Reply to Office Action mailed August 12, 2004

Applicants respectfully submit that the pending claims should now be allowed for at least the foregoing reasons. The new claims, including independent claim 26 should also be allowed for at least the same reasons as they include language even more specifically directed to reducing the impact of denial of service attacks.

In the event that the Examiner finds remaining impediment to a prompt allowance of this application that may be clarified through a telephone interview, the Examiner is requested to contact the undersigned attorney.

Dated this 11 day of November 2004.

Respectfully submitted,

RICK D. NYDEGGER
Registration No. 28,651
JENS C. JENKINS
Registration No. 44,803
Attorneys for Applicant

Customer No. 47973

RDN:JCJ:cm
W:\13768\143.1\CM0000004395V001.DOC